Companies please share their inputs on the excel spreadsheet in ‘/tsg\_ran/WG1\_RL1/TSGR1\_106-e/Inbox/drafts/8.12.2/RRC Parameters/’.

## Inputs on version-000

Please share your inputs, if any, in the following table

|  |  |
| --- | --- |
| **Company** | **Input** |
| Qualcomm | For pucch-ConfigurationList-MulticastIs it common by ACK/NACK-based and NACK-only-based multicast feedback?Based on the following agreement, we support separate *PUCCH-ConfigurationList* for ACK/NACK-based and NACK-only-based multicast feedback.Agreement:For the separate *PUCCH-ConfigurationList* that is optionally configured to UE for NACK-only based HARQ-ACK feedback for multicast,* + The separate *PUCCH-ConfigurationList* for multicast configuration can be a list which includes up to 2 *PUCCH-Config* configurations corresponding low priority feedback and high priority feedback, respectively.

FFS: how to handle the case when separate *PUCCH-ConfigurationList* is not configured to UE for NACK-only based HARQ-ACK feedback for multicast.For harq-FeedbackEnabler-MulticastA parameter for RRC-configured enabling/disabling (if no function of GC-DCI GC-DCI enabling/disabling is configured) is missing. For the function of GC-DCI enabling/disabling, RAN1 has not decided whether to configure it per G-RNTI yet. It should be FFS for now.For pdsch-HARQ-ACK-CodebookList-Multicast and pdsch-HARQ-ACK-Codebook-Multicast:The following agreement is missing.Agreement:When UE is configured with the *pdsch-HARQ-ACK-Codebook/pdsch-HARQ-ACK-CodebookList* for ACK/NACK based feedback for multicast, it is applied to all G-RNTIs configured to UE.For pdsch-AggregationFactor-MulticastDoes it only apply to dynamic GC-PDSCH? Or both dynamic and SPS GC-PDSCH? Or a separate *pdsch-AggregationFactor-Multicast* can be configured in a *sps-Config-Multicast*?Note that for unicast, separate *pdsch-AggregationFactor* can be configured in PDSCH-Config and SPS-Config, respectively. If the one in SPS-Config is absent, it follows *pdsch-AggregationFactor* configured in PDSCH-Config, as specified below (in 38.331).***pdsch-AggregationFactor***Number of repetitions for SPS PDSCH (see TS 38.214 [19], clause 5.1.2.1). When the field is absent, the UE applies PDSCH aggregation factor of PDSCH-Config. |
| FL’s response | @ QualcommThe agreement/proposal intended to focus on NACK-only and unicast, but now the agreement states it is for NACK and FFS how to handle the case when the separate one is not configured. Therefore, accordingly I added two rows to address this point. When we later on are clear how to handle the FFS, we can revisit such parameters then. Regarding the comment that a parameter for RRC-configured enabling/disabling (if no function of GC-DCI GC-DCI enabling/disabling is configured) is missing. Actually it is reflected by “default value”. RRC either configures enable, or “listen to DCI”/dci-enabler, or by default “disabled”. The parameters *pdsch-HARQ-ACK-Codebook/pdsch-HARQ-ACK- CodebookList* has been there in the last two rows. *pdsch-AggregationFactor-Multicast* intended to apply to dynamic only because the agreement was made for dynamic only. It should be straightforward to extend it to SPS meaning a separate configuration for SPS but strictly we don’t have such an agreement. Even though we all agree to have a separate configuration for SPS as is for unicast, I guess we may not need to spell it out in this RRC parameter list because SPS-Config is reused for multicast, and unicast SPS and multicast SPS are configured with different SPS configuration indexes. *pdsch-AggregationFactor* has been one existing parameter in SPS-Config.  |

## Inputs on version-001

Please share your inputs, if any, in the following table

|  |  |
| --- | --- |
| **Company** | **Input** |
| Apple | For parameter sps-PUCCH-AN-List-Multicast, the corresponding parameter sps-PUCCH-AN-Multicast is missing. According to below agreements, if separate sps-PUCCH-AN-List for multicast is configured, the separate sps-PUCCH-AN for multicast should be configured as well. Agreement:For support of ACK/NACK based HARQ-ACK feedback for SPS multicast, * the HARQ-ACK codebook index corresponding the HARQ-ACK codebook for SPS PDSCH is included in the configuration for SPS multicast.
	+ UE determines a priority index from the HARQ-ACK codebook index
* UE can be optionally configured a separate SPS-PUCCH-AN-List for all SPS multicast configurations. Otherwise, a common SPS-PUCCH-AN-List applies to all SPS unicast and SPS multicast configurations.
 |
| FL’s response | @Apple, added as Apple suggested.  |

## Inputs on version-002

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| --- | --- |
| **Company** | **Input** |
| ZTE | Regarding harq-FeedbackEnabler-Multicast, the current value range is {dci-enabler, enabled}. However, based on the yellow highlighted parts in previous agreements, it seems we need to update the value range to “{ dci-enabler, enabled, disable}”Agreement:Update the WA made in RAN1#105-e meeting regarding enabling/disabling HARQ-ACK feedback as follows:Working assumption:For enabling/disabling ACK/NACK-based HARQ-ACK feedback for RRC\_CONNECTED UE receiving multicast via dynamic group-common PDSCH:* RRC signaling configures the enabling/ disabling function of group-common DCI indicating the enabling /disabling ACK/NACK based HARQ-ACK feedback.
	+ If RRC signaling configures the function of group-common DCI based indication, group-common DCI indicates (explicitly or implicitly) whether ACK/NACK based HARQ-ACK feedback is enabled/disabled
	+ Otherwise, enabling/disabling ACK/NACK based HARQ-ACK feedback is configured by RRC signaling.
	+ FFS details on RRC signaling and group-common DCI indicating.
* FFS whether/how this option is extended to apply to NACK-only based feedback and multiple G-RNTI cases.
* FFS the relation to the HARQ-ACK codebook types and HARQ-ACK codebook construction.
* FFS the relation to the enabling/disabling ACK/NACK based HARQ-ACK feedback for retransmission.
* FFS whether/how to allow UE not to react to the DCI signaling, but instead follow UE-specific RRC configuration for HARQ feedback.
* FFS whether/how to apply it to SPS group-common PDSCH.
* UE capability for enabling/ disabling function of group-common DCI indicating the enabling /disabling ACK/NACK based HARQ-ACK feedback is introduced and FFS details.
* Note: It is up to network implementation to avoid any potential HARQ ACK mismatch between different UEs in the same multicast group
 |
| FL’s response | @ZTE,Since the configuration of *harq-FeedbackEnabler-Multicast* will be optional and the default value when this parameter is absent will be discussed anyway, I formulated “disabled” as the default. I wonder whether it is ok to ZTE and if not, what is the essential difference between what you suggested and what I formulated for now?  |
| Qualcomm | Regarding our comments in Sect. 1, Our intention is to add the agreement below in column P for the row of “parameters *pdsch-HARQ-ACK-Codebook/pdsch-HARQ-ACK- CodebookList*”. It indicates RAN2 that the parameters are applied to all G-RNTIs. Agreement:When UE is configured with the *pdsch-HARQ-ACK-Codebook/pdsch-HARQ-ACK-CodebookList* for ACK/NACK based feedback for multicast, it is applied to all G-RNTIs configured to UE.Regarding harq-FeedbackEnabler-MulticastWe have different understanding as FL. The default value means the case of no explicit configuration. Now, the default value is ‘disabled’ in column L, which we understand it only means that the DCI cannot be used to dynamically enabling/disabling HARQ feedback.A new RRC parameter should be introduced for RRC-configured enabling/disabling when harq-FeedbackEnabler-Multicast is absent. Regarding pdsch-AggregationFactor-MulticastBased on FL’s answer, if it is common understanding that pdsch-AggregationFactor-Multicast can be included in SPS-Config-Multicast, we are fine with it. For multicast, the aggregation factor can be independently configured for dynamic and SPS GC-PDSCH.However, the default value of this pdsch-AggregationFactor-Multicast for SPS GC-PDSCH is not clear. A separate row should be added to note that the default value is FFS for now and RAN1 to discuss whether the default value is fixed as no repetition, PDSCH aggregation factor indicated in PDSCH-Config-Multicast in the same CFR, or PDSCH aggregation factor indicated in PDSCH-Config of unicast dedicated BWP. |
| FL’s responses | @QC,Adding the agreement into column P is fine (sorry for not getting this point earlier) but I want to clarify again that the “per UE” is right to address the agreement of “applied to all G-RNTI”. Regarding *harq-FeedbackEnabler-Multicast*The outcome from RRC configuration are three from UE perspective: listening to DCI (by value of dci-enabler), RRC indicating “enabling” (by value of enabled), and RRC indicating “disabling” (by default “disabled”). It is described from UE perspective was because it is UE getting the configuration and how to understand the configuration. Whether the default “disabled” from UE perspective meaning UE does not feedback also means the DCI does not indicating the enabling/disabling may depend on whether it is per UE per G-RNTI or just per G-RNTI which is FFS based on the last meeting discussion. In addition, if it is going to be per UE, whether there is another configuration (same to all UEs) indicating whether the GC-DCI includes the field indicating HARQ-ACK enabling/disabling could also be FFS. I updated the column J (description) in red to clarify all these. Please check whether the comment addressed. Regarding pdsch-AggregationFactor-MulticastFor unicast SPS, when *pdsch-AggregationFactor* is absent, the UE applies PDSCH aggregation factor of PDSCH-Config. Since there are more open options as default when pdsch-AggregationFactor-Multicast is absent. I will take the suggestion to add more row as suggested.  |

## Inputs on version-003

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| --- | --- |
| **Company** | **Input** |
| **Samsung** | Overall OK – just a couple of secondary comments.1. The “ACKNACK” or “NACK”, as in *pucch-ConfigurationList-ACKNACK-Multicast*, makes names of respective parameter unnecessarily long and restrictive. Instead, it can be something like *pucch-ConfigurationList-Multicast1* or *pucch-ConfigurationList-Multicast2* (and ‘multicast’ may also change to ‘r17’). Although, almost certainly, Rel-17 will have only HARQ-ACK as the supported UCI, Rel-18+ may also have CSI. In any case, it would be better to have shorter and more generic names.
2. The description for *fdmed-Reception-Multicast* implies that any combination of unicast/multicast/broadcast is supported. However, it is only for multicast and unicast.
 |
| Ericsson | Regarding harq-FeedbackEnabler-Multicast, we think an additional parameter is needed to also state what type of harq feedback is used by the UE, between ACK/NACK and NACK only. Currently, we do not have agreements as to how the UE chooses NACK only or ACK-NACK in its feedback, since both can be configured via separate PUCCH config for multicast. This means it is unclear how the UE decides to interpret PRI.   |
| FL’s response | @Samsung, changed as suggested. @Ericsson, thanks for the comments. I think more discussion is needed before we adding one more parameter because as what you said we don’t have such an agreement yet.  |

## Inputs on version-004

Please share your inputs, if any, in the following table

|  |  |
| --- | --- |
| **Company** | **Input** |
| TD Tech, Chengdu TD Tech | We think the unit of each parameter for reliability of NR MBS needs to be studied clearly. In detail, the parameters can be classified into several classes:1. For some parameters (for example, PUCCH configuration for ACK/NACK based HARQ-ACK feedback), the unit can be:
	* per MBS session per UE: different MBS sessions received by a UE have different configurations
	* per UE: the MBS sessions received by a UE share the same configuration.
2. For some parameters (for example, PUCCH configuration for NACK-only based HARQ-ACK feedback), the unit can be:
	* per MBS session: UEs receiving the same MBS session have the same configuration. The different MBS sessions can have different configurations.
3. For some parameters (for example, PDSCH repetition related parameter), the unit can be:
* per MBS session per cell:

The related parameter can be configured independently in each cell. The different MBS sessions in a cell usually have different parameter values. * per MBS session per area or per MBS session per cell group

The related parameter is configured for each MBS session of the area or cell group. The cells in the area or cell group have the same parameter value for the same MBS session.For example, the area or cell group can consist of the cells under the control of the same gNB-DU. An MBS session is transmitted in the area or cell group with same PDSCH repetition parameter.* per MBS session group per cell

The related parameter can be configured independently for each MBS session group in each cell. The different MBS sessions in an MBS session group in a cell have same parameter value.For example, a group of MBS sessions are sent to a same group of RRC\_CONNECTED UEs. If the one-to-one mapping between G-RNTI/G-CS-RNTI and MBS session group is supported, the unit of G-RNTI/G-CS-RNTI is per MBS session group per cell.* per MBS session group per area or per MBS session group per cell group

The related parameter can be configured for each MBS session group of the area or cell group. The cells in the area or cell group have the same parameter value for the same MBS session group. For example, a group of MBS sessions are transmitted to a same group of RRC\_CONNECTED UEs in the area or cell group. If the one-to-one mapping between G-RNTI/G-CS-RNTI and MBS session group is supported, the unit of G-RNTI/G-CS-RNTI can be per MBS session group per cell.1. For some parameters (for example, CFR), the unit can be:
* per BWP per cell
* per BWP per area or per BWP per cell group
1. For some parameters (for example, starting position, bandwidth, CORESET/SS and PDCCH/PDSCH configuration of CFR), the unit can be
* per CFR

We suggest to update the unit of each parameter in the RRC parameter list based on the above classes. |